



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,079	04/13/2004	Tim Frost	09401-0104	3976
3490	7590	06/05/2007		
DOUGLAS T. JOHNSON MILLER & MARTIN 1000 VOLUNTEER BUILDING 832 GEORGIA AVENUE CHATTANOOGA, TN 37402-2289			EXAMINER BASTIANELLI, JOHN	
			ART UNIT 3753	PAPER NUMBER
			MAIL DATE 06/05/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/823,079

Applicant(s)

FROST, TIM

Examiner

John Bastianelli

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2007.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 20,21 and 23 is/are allowed.
6) ☒ Claim(s) 1-19 and 22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 06 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12, 18-19, and 22 are under 35 U.S.C. 103(a) as obvious over Johnson et al. US 2002/0171055.

Johnson discloses a valve assembly comprising a plug 26 having a valve seat at a distal portion of the plug, said plug having an outer round perimeter defining a first cross sectional area at a radially exterior holder interface surface; a holder 36 or 22 cantileveredly connected to the plug internal to the outer round perimeter and extending radially past the plug; an actuator 50 and 52 operably connected to the holder; a poppet 34 connected to the actuator, said poppet driven by the actuator intermediate an open configuration wherein a fluid passes intermediate the valve seat and the poppet and a closed configuration wherein the poppet forms a seal relative to the valve seat; wherein the holder, actuator and poppet are positioned within a second cross sectional area parallel to the first cross sectional area when in at least one of the open and closed configurations, said second cross sectional area less than and bounded by a parallel cross section of the first cross sectional area. The actuator has a plurality of linearly moveable shape memory alloy members in that the total movement is greater. The actuator opens in response to an electrical signal and a biasing member 16 closes the valve. The end plug has a boss having the valve seat with a base that contacts the face of the end plug and having a body, neck and head

Art Unit: 3753

and a channel with the holder having a flange and the face has a cross sectional area larger. The valve seat is located along an axis of the end plug and the poppet and is linearly driven. A tubular housing 22 extends about the holder, poppet, and actuator and a second end plug 28 is connected to a distal end of the tube. The actuator is connected to the holder by a clip (holder is 22 and 58 for these claims), the holder has a shoulder having a biasing member and the shoulder is intermediate the clip and biasing member. Johnson lacks the holder 22 at the cross section that it connects to the plug to be greater than the cross section of the holder. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cross section that it connects to the plug to be greater than the cross section of the holder as an obvious matter of design choice since such a modification would have involved a mere change in the size of a component and this would keep the holder from being damaged from a side impact as it would be protected by the plug. A change in the size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Alternatively, Johnson lacks the holder 36 extending distally past the plug. It would have been obvious to one having ordinary skill in the art at the time the invention was made to the holder extend distally past the plug as an obvious matter of design choice since such a modification would have involved a mere change in the length of a component and would make replacing this piece of the device easier as it would be sticking out of the plug instead of having to reach into it.

3. Claims 1-12, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines et al. US 6,464,200 B2.

Hines discloses a valve assembly comprising a plug 12 having a valve seat at a distal portion of the plug, said plug having an outer round perimeter defining a first cross sectional area at a

Art Unit: 3753

radially exterior holder interface surface; a holder 22 and 30 cantileveredly connected to the plug internal to the outer round perimeter and extending radially past the plug; an actuator 14 operably connected to the holder; a poppet 20 connected to the actuator, said poppet driven by the actuator intermediate an open configuration wherein a fluid passes intermediate the valve seat and the poppet and a closed configuration wherein the poppet forms a seal relative to the valve seat; wherein the holder, actuator and poppet are positioned within a second cross sectional area parallel to the first cross sectional area when in at least one of the open and closed configurations, said second cross sectional area less than and bounded by a parallel cross section of the first cross sectional area. The actuator has a plurality of linearly moveable shape memory alloy members in that the total movement is greater. The actuator opens in response to an electrical signal and a biasing member 34 closes the valve. The end plug has a boss having the valve seat with a base that contacts the face of the end plug and having a body, neck and head and a channel with the holder having a flange and the face has a cross sectional area larger. The valve seat is located along an axis of the end plug and the poppet and is linearly driven. A housing extends about the holder, poppet, and actuator. The holder has a shoulder (top part of holder is connected to the spring) and biasing member to bias close the valve. The actuator is connected to the holder by a clip 40 and 42, the holder has a shoulder having a biasing member and the shoulder is intermediate the clip and biasing member. Hines lacks at least one of the holder, actuator and poppet being too big to fit within a cross section of the plug. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the holder, actuator and poppet smaller as an obvious matter of design choice since such a modification would have involved a mere change in the size of the components to be smaller and

Art Unit: 3753

this would make material costs lower as the holder, actuator and poppet would be smaller. A change in the size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

4. Claims 12-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines et al. US 6,464,200 B2 in view of Schloss US 6,050,808.

Hines discloses a housing 150 that is seen as tubular but lacks the holder in the housing. Schloss discloses a housing (Figs. 2 and 3) that extends about everything having an electrical connection 17 exterior to the housing communication with the actuator from an ignitor 11 providing a gas supply to a burner. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the housing enclose everything in order to keep everything from being damaged by external elements.

5. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hines et al. US 6,464,200 B2 in view of Schloss US 6,050,808 in view of Fochtman et al. US 6,392,865. Hines lacks electrical input of 2.5-3.1 Amps. Fochtman discloses valve actuation between 2-6 amps. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the valve actuation of Hines between 2.5-3.1 amps as disclosed by Fochtman in order to provide a valve that is actuated with little power.

Allowable Subject Matter

6. Claims 20-21 and 23 are allowed.

Response to Arguments

7. Applicant's arguments with respect to claims 1-19 and 22 have been considered but are moot in view of the new ground(s) of rejection.
8. The examiner would like to note that Johnson's holder when it is 36 is cantilevered as it is extending into on only one side.
9. The examiner would like to note again that a change in size of a component is completely obvious to anyone skilled in the art and certainly not an inventive feature.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Bastianelli whose telephone number is (571) 272-4921. The examiner can normally be reached on M-Th (8-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JB
May 23, 2007



John Bastianelli
Primary Examiner
Art Unit 3753